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ABSTRACT

The findings of this paper suggest that when students encounter a situation in which they can benefit by cheating, those who score lowest on the exam are least able to resist the temptation to cheat. Exam scores for 459 beginning psychology students were examined. Each student took four exams, but only on the third was copying made impossible. The results appear to suggest an inverse relationship between exam scores and the degree of cheating. As grades decrease, the amount of copying increases. The author concludes that without an item-by-item analysis, and a seating chart, inferences about cheating must remain probabilistic. (Author/PFS)

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Cheating on multiple choice examinations: Lead us not into Temptation

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Introduction

It has been observed that introductory psychology students writing multiple choice examinations generally improve their grades during the first four exams. Reynolds has suggested that students are not merely learning to learn but may be learning to copy from other students during the exam. When copying was prevented, Reynolds found a considerable shift downward in grade distributions (1). The present paper is a more detailed analysis of cheating and of who is doing it.

Procedure

Approximately 1,050 students are enrolled in the introductory psychology course at this university. Day classes are comprised of 30-40 students and are taught by graduate teaching assistants twice weekly. In addition, a guest speaker appears once each week. Classes are held on a Monday and Friday or Tuesday and Thursday basis. For the present study exam scores for 459 students attending Monday/Friday lectures were examined. Four exams were administered during the first semester of the 1976-77 academic year. Each consisted of 50 multiple-choice questions. During the first week of class all students took the final exam of the first semester for the preceding year. Thus, students were acquainted with the examination procedure.

On examination days students met in their respective classrooms which, due to limited space, placed students in close proximity to one another. For exams 1 and 2 all Monday/Friday sections were

administered the same examination questionnaire. However, for exam 3, within each section three different examination forms were used. Therefore, if a student received exam form A the person on his/her right would have form B and the person on the left form C. By employing such a technique students were forced to use only their own resources and not those of people sitting next to them. For exam 4 the routine procedure of exams 1 and 2 was resumed.

Results

For each of the four exams students were assigned to one of five categories based upon their scores (maximum = 50): I) 45-50, II) 40-44, III) 35-39, IV) 30-34, and V) 29 or less. Students could shift to a different category if their scores increased or decreased sufficiently between exams. For example, a student who scored 37 on exam 1 would be assigned to category III. If the same student improved his/her score to 43 on exam 2 he/she would be included in category II for that exam.

Figure 1 represents average changes between exams for the 5 categories of students. Changes observed from exam 1 to exam 2 indicate a tendency for scores to converge upon a common mean. Students in categories I and II tend to decrease scores slightly while those in IV and V increase. There is no change in category III.

When copying was controlled during exam 3 there is quite a different trend. Students in categories I and II continue to decline

slightly as they did from exam 1 to 2. However, students in categories III, IV and V show a dramatic decrease in average scores. When the procedure employed for exams 1 and 2 is instituted again on exam 4 students in categories I and II continue to show a slight decline. But those in category III now show a slight increase in scores. The greatest change, however, is observed in categories IV and V where students show a dramatic increase from their decreased grades on exam 3. A trend similar to that observed between exams 1 and 2 reappears between exams 3 and 4 when cheating is once again possible. The increasing slopes for categories III, IV and V are even more profound either indicating an easy fourth exam, increased studying, or that students in these categories compensated for poor grades obtained on the third by increased copying.

Discussion

It is of course possible that changes from exam 2 to exam 3 in Figure 1 may only reflect the impact of a difficult examination on students who were already obtaining low grades. That is, exam 3 may have been so difficult as to significantly effect the scores of poorer students while not altering those of the better students. From observing the slopes of lines indicating overall changes from exams 2-3, it is observed that each category decreases scores in a comparatively uniform manner. When this trend was compared to grade distributions for the previous academic year, no such tendency was observed. Since neither the amount nor the degree of difficulty of the material differed from the third exam for the present year

it appears that the degree of difficulty of the third exam cannot account for declining exam scores between categories.

A more plausible interpretation of this data is that generally, those students who acquire high grades (40/50 and higher) rely on their own resources, and when the exam-taking procedure is altered to make copying more difficult (or impossible) there is very little impact on these students. This is not to say that students in these groups do not copy if given an opportunity, but that they do not rely on it. Students who obtain lower grades, especially those receiving 34/50 or less, rely more on the resources of their fellow students. If students in categories IV and V were relying on their own information, their exam scores should have continued to increase between exam 2 and 3 as they did between 1 and 2.

The present results appear to suggest an inverse relationship between exam scores and the degree of cheating. That is, as grades decrease the amount of copying increases. Support for this view was provided when data were analyzed in a different way. Students were placed into one of the five categories based upon scores obtained on exam 1, and remained in the same category throughout the 4 exams. Thus, variation between examination scores for the 5 groups could be observed when the students remained within the same category (see Fig. 2). A 5(Category) X 4(Exam) repeated measure ANOVA for unequal n was carried out. Highly significant differences between groups support the results stated above.

The findings of this paper suggest that when students encounter a situation where they can benefit by cheating, those who do poorest are least able to resist the temptation. A first reaction may be that it is the responsibility of the student to study. Certainly no one can object to this. But are there other responsibilities involved? A university, eager for students in these financially difficult times, may recruit students who are either unprepared or actually unable to master the academic work required in university courses. A professor may feel that together with his research activities his responsibility is primarily to prepare and teach material effectively. By failing to institute increased "security" measures how much is his contribution to the cheating behavior of his poorer students?

Finally, what is the appropriate response to these data? Without an item by item analysis (and a seating chart) inferences about cheating must remain probabilistic. After all no one in this study was actually "caught" cheating--although some students may have been caught <u>not</u> cheating.

References

Reynolds, D. V. Cheating on Exams: An environmental impact study. Newsletter of the Interest Group for The Teaching of Psychology, 1, No. 2, 1-2, March, 1977.

FIGURES

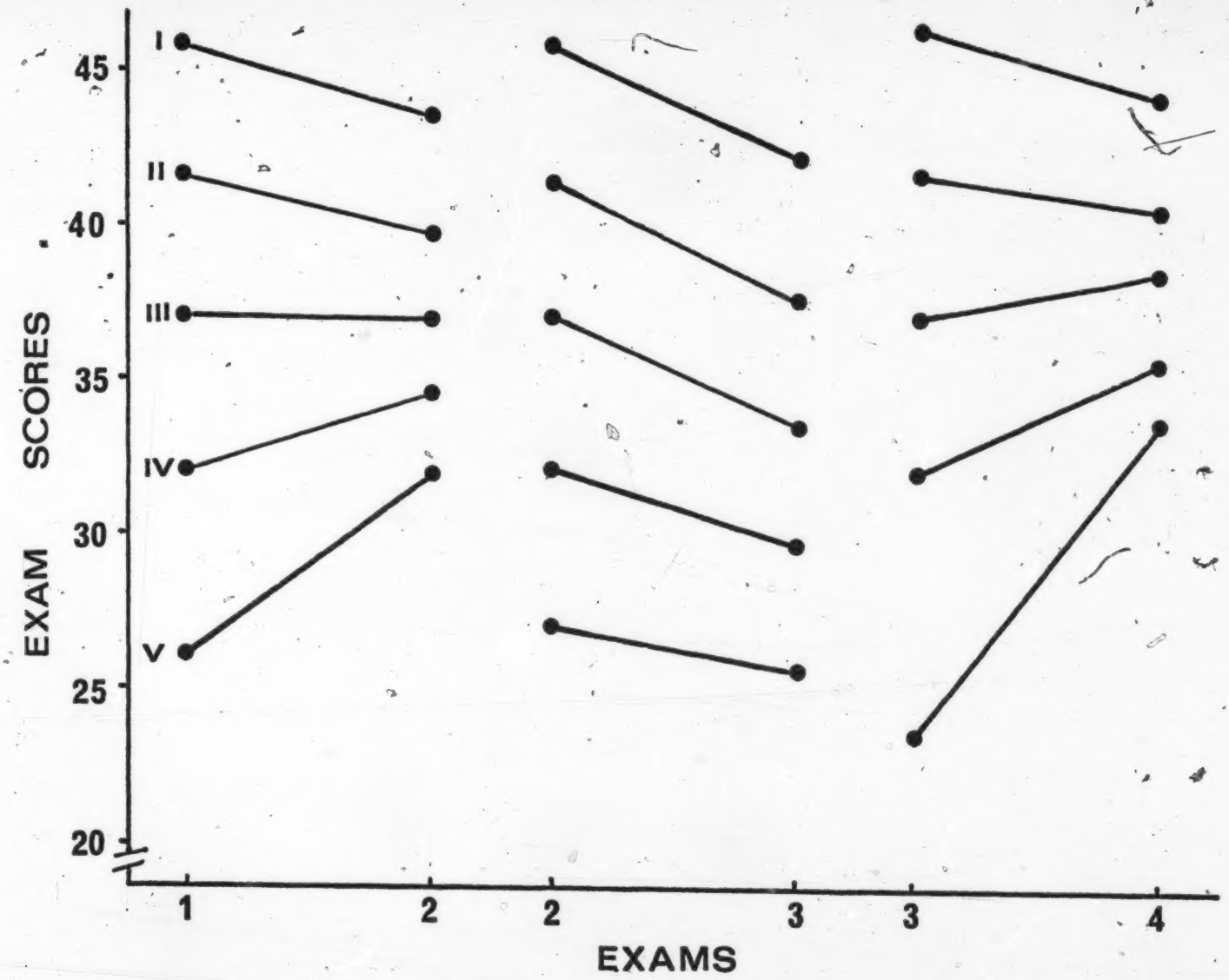

Figure 1. Changes in examination means between exams when n is not constant within categories.

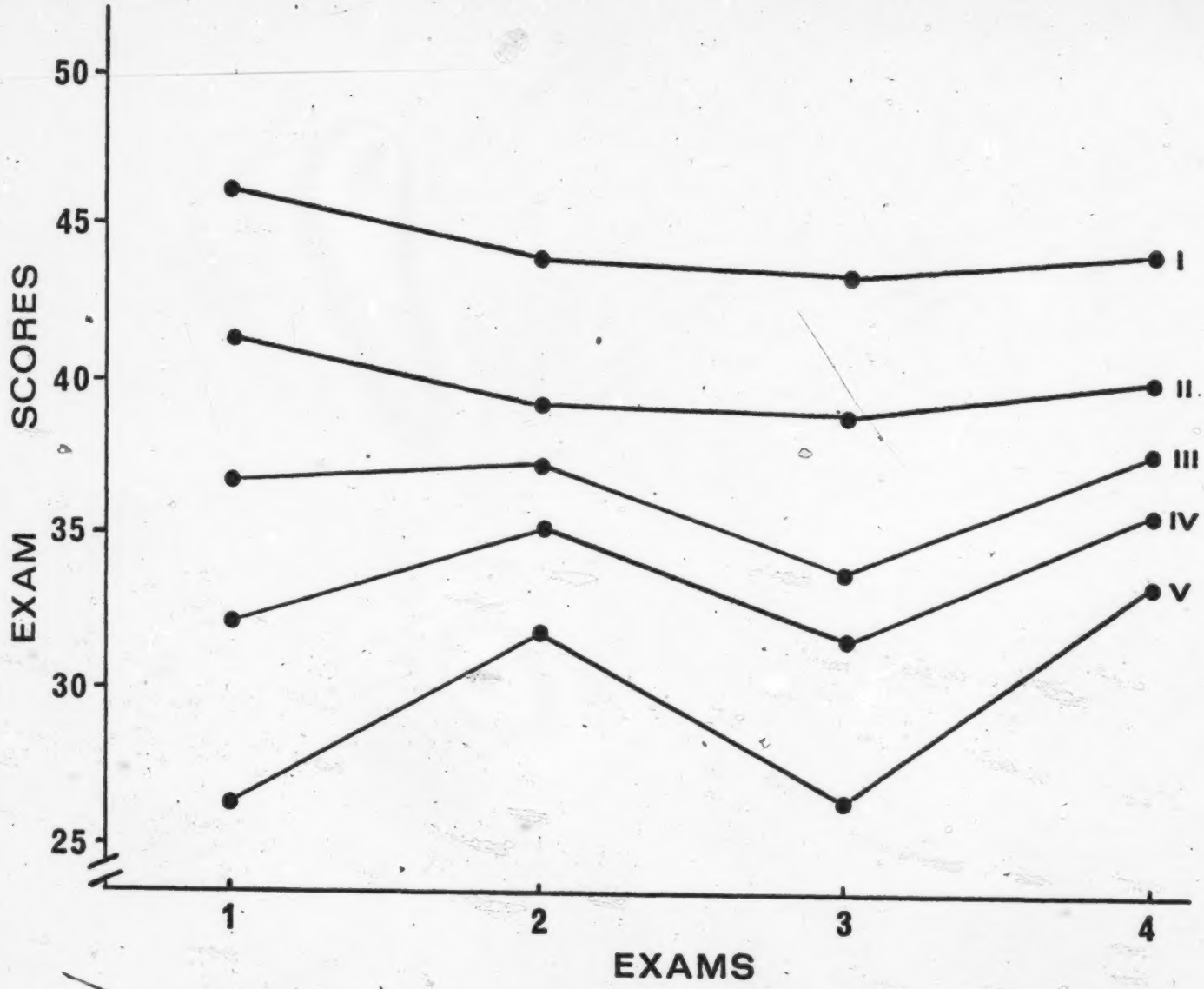

Figure 2. Changes in examination means between exams when n is equal within categories.